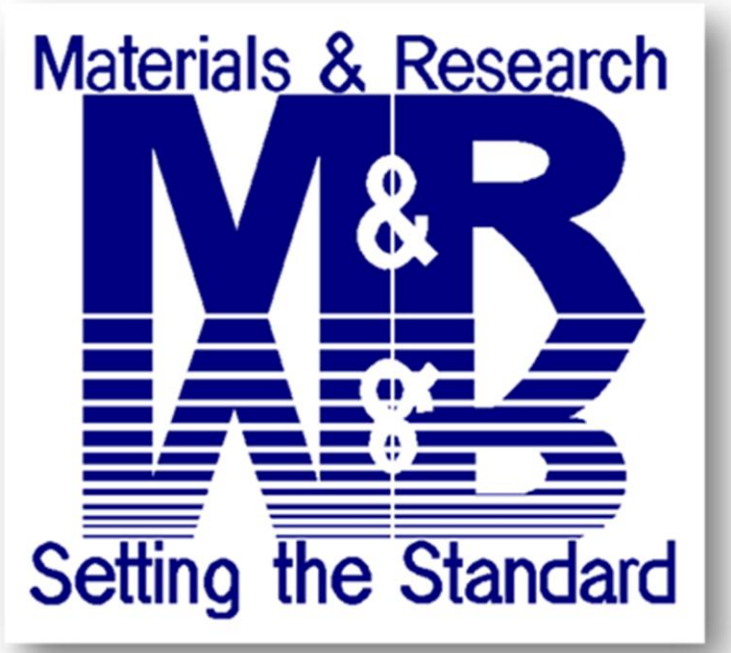


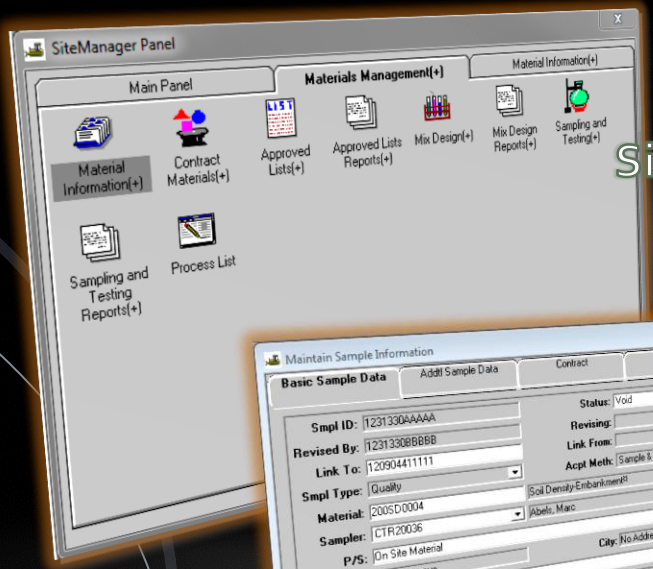
Research, SiteManager & Office Services Section

Research, SiteManager & Office Services Section

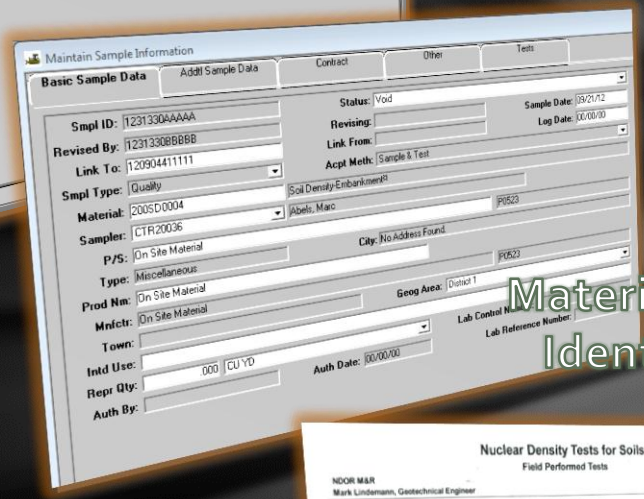
Philosophy & Approach

The SiteManager Unit's mission is to build and maintain the material requirements in SiteManager which allows us to record, track, and maintain historical data on materials used in highway construction. The SiteManager Unit also creates and participates in training for SiteManager, coordinating the final review process, administering changes to the Material Sampling Guide and the Nebraska Standard Test Manual, and estimates the Material Sampling and Testing requirements for LPA projects. This work involves working closely with M&R Section Heads, Lab Managers, and the Construction Office to ensure that requirements are presented in a clear and easily understood manner. In addition to working closely with M&R personnel, the SiteManager unit also works with NDOR and LPA field personnel assisting in answering questions that come up with regards to Material Sampling and Testing or documentation requirements on projects. Additionally, the shop maintains and repairs laboratory equipment in the central and branch laboratories.

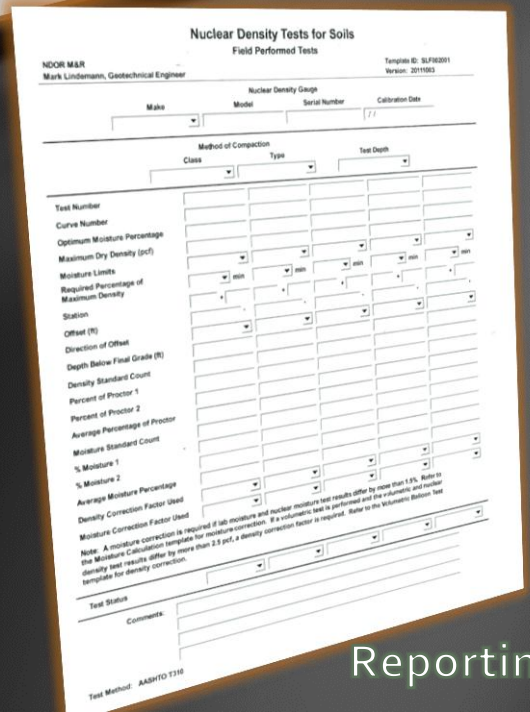
The Research's mission is to coordinate the departments research program, with its primary objective to reduce the costs of construction and maintenance, improve the quality of service to the highway user, increase the efficiency of highway planning, operations and administration, reduce crashes and crash severity, encompass the interrelationships of socioeconomic, environmental and technical factors into the transportation system and implement favorable finding into departmental procedures and processes.
The section also provides IT support staff for the 1400 building and performs all clerical tasks with the division.



SiteManager Panel



Material Sample Identification



Reporting

M313

Further Studies to Test Bait Away and Overwintering Biology of American Burying Beetle

Principle Investigator:
Wyatt Hoback

This research will directly benefit the Nebraska Department of Roads by pro
data on the effectiveness of bait-away protocols to draw American Bu
Beetles out of work zones, and to document American Burying Beetle respon
mowing. In addition, documenting behavior and overwintering by burying b
may allow winter pre-construction activities. This project has the potent
eliminate trap and relocate conservation requirements in construction zones
Nebraska counties covering an area of nearly one third of Nebraska.

M314

Development and Evaluation of BMPs for Highway Runoff Pollution Control

Principle Investigator:
Tian Zhang, Massoum Moussavi and John Stansbury

The goal of this project is to develop and evaluate BMPs that rely on bioretent
infiltration and slow conveyance of stormwater for highway runoff pollu
control. The specific objects are to:

- Find the combinations of plants and soil media that will be sustainable in
varied regions of Nebraska
- Test the feasibility of using shredded tires as the porous media
bioretention systems (BRSs) and constructed wetlands (CWs)

P323

Safety Improvements at Highway-Railroad Crossings for Pedestrian and Bicyclists & Assessment of Long-Term Effects of Centerline Curbing

Principle Investigator:
Aemal Khattak

This research will show the long-term effectiveness of centerline barriers i
reducing unsafe motorist actions as well as any permanent change in motorist
behavior when the curbing is removed. Reduction of bicyclist and pedestrian
unsafe behaviors in the vicinity of highway-railroad crossings is the next logica
step after research on motor vehicle drivers. If found effective, the use of guid
and/or warning signs can make crossings with frequent transgressions safer
Benefit from the research is improvement in safety of motorist, bicyclists and
pedestrians at railroad crossings.

M322

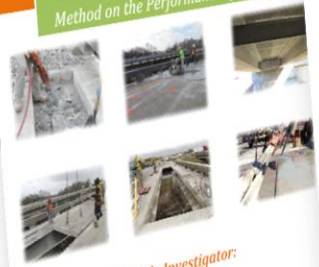
Further development of ice melting [illegible] tests and analysis of MDSS d[illegible]

Principle Investigator:
Chris Tuan

The objective of this project is to transform the results of the shake
previous research project into a gold standard for ice melting capa
of deicing chemicals. Variables affecting winter operations inclu
precipitation, air and pavement temperature, traffic, wind, time
week, and the availability of maintenance equipment. Once sha
are validated using MDSS and field data, the field performance of d
chemicals can be predicted with confidence. A comprehensive be
normal deicing operations in will drafted.

M325

Evaluating the Impact of Deck Removal Method on the Performance of NU Girders



Principle Investigator:
George Morcous

Since its development in the mid-1990s, NU I-girders have been the dominant type
of precast/prestressed concrete girders on Nebraska bridges. Cast-in-place
concrete bridge decks on NU-girders will eventually reach the end of their service
life or become functionally obsolete and will need to be replaced. Investigating
the impact of using different deck removal methods on an actual bridge that will
be demolished is an excellent and rare opportunity. This allows NDOR to
experimentally evaluate the relative efficiency of these methods and the
severity/extent of damage to NU girders from each method as well as its impact
on the girder performance.

M331

Open-bottom culverts in Nebraska

Principle Investigator:
David Admiraal, Junke Guo and John Stansbury

The results of this research will be a review of literature related to stream stability
and its impact on culvert installation. This review will contain information about
existing bottomless culvert designs, stream stability, and culvert scour, focused
primarily on streambed conditions similar to those found in Nebraska. The review
will be useful for identifying potential bottomless culvert designs for Nebraska,
recognizing streams with continuing stability issues. The research will provide a
good framework for assessing stream stability and other factors that impact the
feasibility of installing bottomless culverts at stream crossings.